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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/722,410	OKADA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	ROBERT MOSSER	3714	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to The Amendment dated 12/31/2007.
2. ☒ The allowed claim(s) is/are 173-182, 186-195, 202-203, 205-206, 210-221, 240-251.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☒ None    of the:
  1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date <u>1-16-04</u></li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____</li> </ol> |
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### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael Shea on February 14<sup>th</sup>, 2008.

The application has been amended as follows:

Please amend the claims as attached.

Claims 1-172 (Canceled)

Claim 173 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~050000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~060000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;

- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions cause background data to be selectively written to the video storage as either character data or bitmap data so that backgrounds of the video game display are selectively rendered in a character mode or in a bitmap mode;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions in generating a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit position 3 of the storage location specifies whether vertical blanking interval interrupts are enabled;

bit position 4 of the storage location specifies whether horizontal blanking interval interrupts are enabled; and

bit position 5 of the storage location specifies whether vertical counter matching interrupts are enabled,

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 174 (Previously Presented): The emulator of claim 173, wherein the predetermined storage location of the second system is at address 04000004h.

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Claim 175 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~050000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~060000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions cause background data to be selectively written to the video storage as either character data or bitmap data so that backgrounds of the video game display are selectively rendered in a character mode or in a bitmap mode;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions in generating a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-2 of the storage location specify a background mode;

bit position 4 of the storage location specifies a display frame selector for selecting between two different frame buffers;

bit position 5 of the storage location specifies whether to render objects during horizontal blanking intervals;

bit position 6 of the storage location specifies a control bit for selecting between one-dimensional and two-dimensional object character mapping;

bit positions 8-12 of the storage location specify display of four different background screens and display of moving objects;

bit positions 13-14 of the storage location select display of two different windows; and

bit position 15 of the storage location selects display of an object window,

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 176 (Previously Presented): The emulator of claim 175, wherein the predetermined storage location of the second system is at address 04000000h.

Claim 177 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the

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memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions cause background data to be selectively written to the video storage as either character data or bitmap data so that backgrounds of the video game display are selectively rendered in a character mode or in a bitmap mode;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions in generating a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-1 of the storage location specify one of four background priority levels;

bit positions 2-3 of the storage location specify a character base block value;

bit position 6 of the storage location specifies a mosaic enable/disable flag;

bit position 7 of the storage location selects between a 16 color, 16 palette color mode and a 256 color, one palette color mode;

bit positions 8-12 of the storage location specify a screen base block; and

bit positions 14-15 of the storage location specify a screen size,

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 178 (Previously Presented): The emulator of claim 177, wherein the predetermined storage location of the second system is at one or the other of address 04000008h and address 0400000Ah.

Claim 179 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~050000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~060000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions cause background data to be selectively written to the video storage as either character data or bitmap data so

that backgrounds of the video game display are selectively rendered in a character mode or in a bitmap mode;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions in generating a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-3 of the storage location specify a background character mosaic horizontal size;

bit positions 4-7 of the storage location specify a background character mosaic vertical size;

bit positions 8-11 of the storage location specify a moving object character mosaic horizontal size; and

bit positions 12-15 of the storage location specify a moving object character mosaic vertical size,

wherein the mosaic sizes specify how many dots in an original character should be replaced by a virtual character, and

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 180 (Previously Presented): The emulator of claim 179, wherein the predetermined storage location of the second system is at address 0400004Ch.

Claim 181 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute



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memory (OAM) in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~050000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~060000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions cause background data to be selectively written to the video storage as either character data or bitmap data so that backgrounds of the video game display are selectively rendered in a character mode or in a bitmap mode;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions in generating a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for controlling rotation and/or scaling, the at least one further instruction writing rotation/scaling data to at least one storage location of the second system including:

- a 12-bit value specifying an x-coordinate reference starting point;
- a 12-bit value specifying a y-coordinate reference starting point;

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a 16-bit value specifying a distance of movement in the x-direction; and  
a 16-bit value specifying a distance of movement in the y-direction,  
wherein the emulator emulates the storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated storage location.

Claim 182 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~050000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~060000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions cause background data to be selectively written to the video storage as either character data or bitmap data so that backgrounds of the video game display are selectively rendered in a character mode or in a bitmap mode;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions in generating a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-4 of the storage location specify whether to display any or all of four backgrounds and a moving object in a first display window;

bit position 5 of the storage location specifies whether to enable color special effects within the first display window;

bit positions 8-12 of the storage location specify whether to display any or all of the four backgrounds and the moving object within a second display window different than the first display window;

bit position 13 of the storage location specifies whether to enable color special effects within the second display window, and

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claims 183-185 (Canceled).

Claim 186 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~050000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~060000000h~~ to 06017FFFh, the emulator comprising:

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first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions access two allocated frame buffers in the video storage to provide full motion video;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit position 3 of the storage location specifies whether vertical blanking interval interrupts are enabled;

bit position 4 of the storage location specifies whether horizontal blanking interval interrupts are enabled;

bit position 5 of the storage location specifies whether vertical counter matching interrupts are enabled, and

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 187 (Previously Presented): The emulator of claim 186, wherein the predetermined storage location of the second system is at address 04000004h.

Claim 188 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions access two allocated frame buffers in the video storage to provide full motion video;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-2 of the storage location specify a background mode;

bit position 4 of the storage location specifies a display frame selector for selecting between two different frame buffers;

bit position 5 of the storage location specifies whether to render objects during horizontal blanking intervals;

bit position 6 of the storage location specifies a control bit for selecting between one-dimensional and two-dimensional object character mapping;

bit positions 8-12 of the storage location specify display of four different background screens and display of moving objects;

bit positions 13-14 of the storage location select display of two different windows; and

bit position 15 of the storage location selects display of an object window, and

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 189 (Previously Presented): The emulator of claim 188, wherein the predetermined storage location of the second system is at address 04000000h.

Claim 190 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage

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in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions access two allocated frame buffers in the video storage to provide full motion video;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-1 of the storage location specify one of four background priority levels;  
bit positions 2-3 of the storage location specify a character base block value;  
bit position 6 of the storage location specifies a mosaic enable/disable flag;  
bit position 7 of the storage location selects between a 16 color, 16 palette color mode and a 256 color, one palette color mode;

bit positions 8-12 of the storage location specify a screen base block; and

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bit positions 14-15 of the storage location specify a screen size, and wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 191 (Previously Presented): The emulator of claim 190, wherein the predetermined storage location of the second system is at one or the other of address 04000008h and address 0400000Ah.

Claim 192 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~050000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~060000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,



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wherein the video game program instructions access two allocated frame buffers in the video storage to provide full motion video;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-3 of the storage location specify a background character mosaic horizontal size;

bit positions 4-7 of the storage location specify a background character mosaic vertical size;

bit positions 8-11 of the storage location specify a moving object character mosaic horizontal size; and

bit positions 12-15 of the storage location specify a moving object character mosaic vertical size,

wherein the mosaic sizes specify how many dots in an original character should be replaced by a virtual character, and

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 193 (Previously Presented): The emulator of claim 192, wherein the predetermined storage location of the second system is at address 0400004Ch.

Claim 194 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute

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memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions access two allocated frame buffers in the video storage to provide full motion video;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for controlling rotation and/or scaling, the at least one further instruction writes rotation/scaling data to at least one storage location of the second system including:

- a 12-bit value specifying an x-coordinate reference starting point;
- a 12-bit value specifying a y-coordinate reference starting point;
- a 16-bit value specifying a distance of movement in the x-direction; and
- a 16-bit value specifying a distance of movement in the y-direction, and

wherein the emulator emulates the storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated storage location.

Claim 195 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
  - (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
  - (c) write moving object data and background data to the video storage of the second system; and
  - (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,
- wherein the video game program instructions access two allocated frame buffers in the video storage to provide full motion video;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-4 of the storage location specify whether to display any or all of four backgrounds and a moving object in a first display window;

bit position 5 of the storage location specifies whether to enable color special effects within the first display window;

bit positions 8-12 of the storage location specify whether to display any or all of the four backgrounds and the moving object within a second display window different than the first display window; and

bit position 13 of the storage location specifies whether to enable color special effects within the second display window, and

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claims 196-201 (Canceled).

Claim 202 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~0500000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~0600000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

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- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions cause background data to be selectively written to the video storage as either character data or bitmap data so that backgrounds of the video game display are selectively rendered in a character mode or in a bitmap mode;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions in generating a video game display on the first display,

wherein the first system comprises a hand-held system running a Palm-based operating system.

Claim 203 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~050000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~060000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the

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memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions cause background data to be selectively written to the video storage as either character data or bitmap data so that backgrounds of the video game display are selectively rendered in a character mode or in a bitmap mode;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions in generating a video game display on the first display,

wherein the first system comprises a hand-held system running a Windows-based operating system.

Claim 204 (Canceled).

Claim 205 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage

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in a memory space from 05000000h ~~050000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~060000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions access two allocated frame buffers in the video storage to provide full motion video;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the first system comprises a hand-held system running a Palm-based operating system.

Claim 206 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage

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in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions access two allocated frame buffers in the video storage to provide full motion video;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the first system comprises a hand-held system running a Windows-based operating system.

Claim 207-209 (Canceled).

Claim 210 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second



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system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions control alpha blending of plural display windows;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit position 3 of the storage location specifies whether vertical blanking interval interrupts are enabled;

bit position 4 of the storage location specifies whether horizontal blanking interval interrupts are enabled; and

bit position 5 of the storage location specifies whether vertical counter matching interrupts are enabled, and

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 211 (Previously Presented): The emulator of claim 210, wherein the predetermined storage location of the second system is at address 04000004h.

Claim 212 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

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wherein the video game program instructions control alpha blending of plural display windows;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-2 of the storage location specify a background mode;

bit position 4 of the storage location specifies a display frame selector for selecting between two different frame buffers;

bit position 5 of the storage location specifies whether to render objects during horizontal blanking intervals;

bit position 6 of the storage location specifies a control bit for selecting between one-dimensional and two-dimensional object character mapping;

bit positions 8-12 of the storage location specify display of four different background screens and display of moving objects;

bit positions 13-14 of the storage location select display of two different windows; and

bit position 15 of the storage location selects display of an object window, and

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 213 (Previously Presented): The emulator of claim 212, wherein the predetermined storage location of the second system is at address 04000000h.

Claim 214 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second

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system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions control alpha blending of plural display windows;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

- bit positions 0-1 of the storage location specify one of four background priority levels;
- bit positions 2-3 of the storage location specify a character base block value;
- bit position 6 of the storage location specifies a mosaic enable/disable flag;

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bit position 7 of the storage location selects between a 16 color, 16 palette color mode and a 256 color, one palette color mode;

bit positions 8-12 of the storage location specify a screen base block; and

bit positions 14-15 of the storage location specify a screen size, and

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 215 (Previously Presented): The emulator of claim 214, wherein the predetermined storage location of the second system is at one or the other of address 04000008h and address 0400000Ah.

Claim 216 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and

- (d) generate a video game display on the second display based at least on part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage, wherein the video game program instructions control alpha blending of plural display windows;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-3 of the storage location specify a background character mosaic horizontal size;

bit positions 4-7 of the storage location specify a background character mosaic vertical size;

bit positions 8-11 of the storage location specify a moving object character mosaic horizontal size; and

bit positions 12-15 of the storage location specify a moving object character mosaic vertical size,

wherein the mosaic sizes specify how many dots in an original character should be replaced by a virtual character, and

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 217 (Previously Presented): The emulator of claim 216, wherein the predetermined storage location of the second system is at address 0400004Ch.

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Claim 218 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions control alpha blending of plural display windows;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for controlling rotation and/or scaling, the at least one further instruction writes rotation/scaling data to at least one storage location of the second system including:

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a 12-bit value specifying an x-coordinate reference starting point;  
a 12-bit value specifying a y-coordinate reference starting point;  
a 16-bit value specifying a distance of movement in the x-direction; and  
a 16-bit value specifying a distance of movement in the y-direction, and  
wherein the emulator emulates the storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated storage location.

Claim 219 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions control alpha blending of plural display windows;



second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-4 of the storage location specify whether to display any or all of four backgrounds and a moving object in a first display window;

bit position 5 of the storage location specifies whether to enable color special effects within the first display window;

bit positions 8-12 of the storage location specify whether to display any or all of the four backgrounds and the moving object within a second display window different than the first display window; and

bit position 13 of the storage location specifies whether to enable color special effects within the second display window, and

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 220 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the

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memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions control alpha blending of plural display windows;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the first system comprises a hand-held system running a Palm-based operating system.

Claim 221 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the

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memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs to the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions control alpha blending of plural display windows;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the first system comprises a hand-held system running a Windows-based operating system.

Claims 222-239 (Canceled).

Claim 240 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~050000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~060000000h~~ to 06017FFFh, the emulator comprising:

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first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions control performance of arithmetic operations on two selected surfaces and processing for up to 16 levels of semi-transparency;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit position 3 of the storage location specifies whether vertical blanking interval interrupts are enabled;

bit position 4 of the storage location specifies whether horizontal blanking interval interrupts are enabled; and

bit position 5 of the storage location specifies whether vertical counter matching interrupts are enabled, and

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wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 241 (Previously Presented): The emulator of claim 240, wherein the predetermined storage location of the second system is at address 04000004h.

Claim 242 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions control performance of arithmetic operations on two selected surfaces and processing for up to 16 levels of semi-transparency;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-2 of the storage location specify a background mode;

bit position 4 of the storage location specifies a display frame selector for selecting between two different frame buffers;

bit position 5 of the storage location specifies whether to render objects during horizontal blanking intervals;

bit position 6 of the storage location specifies a control bit for selecting between one-dimensional and two-dimensional object character mapping;

bit positions 8-12 of the storage location specify display of four different background screens and display of moving objects;

bit positions 13-14 of the storage location select display of two different windows; and

bit position 15 of the storage location selects display of an object window, and

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 243 (Previously Presented): The emulator of claim 242, wherein the predetermined storage location of the second system is at address 04000000h.

Claim 244 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage

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in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions control performance of arithmetic operations on two selected surfaces and processing for up to 16 levels of semi-transparency;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-1 of the storage location specify one of four background priority levels;

bit positions 2-3 of the storage location specify a character base block value;

bit position 6 of the storage location specifies a mosaic enable/disable flag;

bit position 7 of the storage location selects between a 16 color, 16 palette color mode and a 256 color, one palette color mode;

bit positions 8-12 of the storage location specify a screen base block; and  
bit positions 14-15 of the storage location specify a screen size, and  
wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 245 (Previously Presented): The emulator of claim 244, wherein the predetermined storage location of the second system is at one or the other of address 04000008h and address 0400000Ah.

Claim 246 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~050000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~060000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs the second user controls and on the contents of the OAM, the color palette storage, and the video storage,



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wherein the video game program instructions control performance of arithmetic operations on two selected surfaces and processing for up to 16 levels of semi-transparency;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-3 of the storage location specify a background character mosaic horizontal size;

bit positions 4-7 of the storage location specify a background character mosaic vertical size;

bit positions 8-11 of the storage location specify a moving object character mosaic horizontal size; and

bit positions 12-15 of the storage location specify a moving object character mosaic vertical size,

wherein the mosaic sizes specify how many dots in an original character should be replaced by a virtual character, and

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 247 (Previously Presented): The emulator of claim 246, wherein the predetermined storage location of the second system is at address 0400004Ch.

Claim 248 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second

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system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions control performance of arithmetic operations on two selected surfaces and processing for up to 16 levels of semi-transparency;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for controlling rotation and/or scaling, the at least one further instruction writes rotation/scaling data to at least one storage location of the second system including:

- a 12-bit value specifying an x-coordinate reference starting point;
- a 12-bit value specifying a y-coordinate reference starting point;

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a 16-bit value specifying a distance of movement in the x-direction; and  
a 16-bit value specifying a distance of movement in the y-direction, and  
wherein the emulator emulates the storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated storage location.

Claim 249 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions control performance of arithmetic operations on two selected surfaces and processing for up to 16 levels of semi-transparency;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the memory stores at least one further instruction executable by the second processor for accessing a predetermined storage location of the second system, wherein

bit positions 0-4 of the storage location specify whether to display any or all of four backgrounds and a moving object in a first display window;

bit position 5 of the storage location specifies whether to enable color special effects within the first display window;

bit positions 8-12 of the storage location specify whether to display any or all of the four backgrounds and the moving object within a second display window different than the first display window; and

bit position 13 of the storage location specifies whether to enable color special effects within the second display window, and

wherein the emulator emulates the predetermined storage location and transforms the at least one further instruction to at least one instruction executable by the first processor to access the emulated predetermined storage location.

Claim 250 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~050000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~060000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the

memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions control performance of arithmetic operations on two selected surfaces and processing for up to 16 levels of semi-transparency;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the first system comprises a hand-held system running a Palm-based operating system.

Claim 251 (Currently Amended): An emulator for execution on a first system including a first processor, first user controls and a first display, the emulator at least in part emulating the operation of a hand-held second system used to play video games, the second system comprising a second processor, second user controls, a second display, an object attribute memory (OAM) storage in a memory space from 07000000h to 070003FFh, color palette storage in a memory space from 05000000h ~~05000000h~~ to 050003FFh and video storage in a memory space from 06000000h ~~06000000h~~ to 06017FFFh, the emulator comprising:

first instructions for execution by the first system to access a memory storing video game program instructions, wherein at least some of the video game program instructions stored in the memory are incompatible with the first system and wherein the video game program instructions are executable by the second system to:

- (a) store no more than 128 different 48-bit moving object definitions in the OAM of the second system at any one time;
- (b) store no more than 512 different 15-bit color values in the color palette storage of the second system at any one time;
- (c) write moving object data and background data to the video storage of the second system; and
- (d) generate a video game display on the second display based at least in part on inputs the second user controls and on the contents of the OAM, the color palette storage, and the video storage,

wherein the video game program instructions control performance of arithmetic operations on two selected surfaces and processing for up to 16 levels of semi-transparency;

second instructions for execution by the first system to transform at least some of the video game program instructions stored in the memory that are incompatible with the first system into transformed instructions that are compatible with the first system; and

third instructions for execution by the first system to use the transformed video game program instructions to generate a video game display on the first display,

wherein the first system comprises a hand-held system running a Windows-based operating system.

End of amendment.

### **Consideration of Filed References**

The Nintendo of America Inc. Game Boy programming Manual Version 1.0 released 11/09/1999 (300+ pages) was deemed to be pertinent to prosecution and

accordingly will be made of record. The remaining hardware documents are not particularly relevant to the patentability of the allowed claims..

### **Claim Interpretation**

The pending claims as set forth contain language specifying memory address ranges of different types of memory (ex object attribute memory), as the address ranges are presented without any reliance on a common memory structure there is no point of reference that would allow for the determination a defined memory location. While convention must factor some role in the interpretation of a claim the review of the claims with respect to enumerated memory locations is understood to reasonably set forth a defined memory space size for the respective sections. Hence for the purposes of claim interpretation the particular memory addressing location does not bear significant patentably weight beyond setting a size of the defined memory portions.

In similar light to the above the claim references setting forth the enumeration of bit positions defines a that said position are unique from one another however does not establish a particular order to the bit positions as presented. Accordingly claim references to structure and function of enumerated bit positions are interpreted to only establish that the respective bit positions are distinct but not to confer a specific order to the bit positions.

### **Reasons for Allowance**

The following is an examiner's statement of reasons for allowance: The prior art of record when considered alone or in combination fails to reasonably teach or suggest an emulator including:

- a 3FFh object attribute memory,
- a 3FFh color palette memory,
- a 17FFFh video storage memory,

the transformation and execution of incompatible video game instructions, and the specific association of a plurality instruction identified bit positions with the specific data elements as presented in the respective claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT MOSSER whose telephone number is (571)272-4451. The examiner can normally be reached on 8:30-4:30 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pezzuto can be reached on (571) 272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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/R. M./

Examiner, Art Unit 3714

February 15<sup>th</sup>, 2008

/XUAN M. THAI/

Supervisory Patent Examiner, Art Unit 3714